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STABLE W/O/W EMULSION AND ITS UTILIZATION AS A COSMETIC AND/OR DERMATOLOGICAL COMPOSITION

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[Abstract]

The present invention relates to a triple water/oil/water emulsion comprising an external aqueous phase and a primary W/O emulsion comprising an oil phase and an internal aqueous phase, characterized in that it contains at least one partially or completely crosslinked organopolysiloxane elastomer comprising a polyoxyethylenated and/or polyoxypropylenated chain.

The triple emulsion remains stable and it is particularly appropriate as a cosmetic or dermatological composition, notably as a vehicle for active substances, particularly water soluble active substances present in the internal aqueous phase.

Preferably, the external aqueous phase contains at least one nonionic surfactant having an HLB of greater than 12 and the primary emulsion contains at least one nonionic surfactant having an HLB of less than 8.

The emulsion obtained can constitute, in particular, a composition to clean and/or treat and/or protect the skin and/or the mucosal membranes and/or the keratinous fibers.

[0001]

The present invention relates to a stable triple water/oil/water emulsion and its utilization notably in the cosmetic and/or dermatological fields, particularly for the controlled release of active substances, in particular to clean and/or treat and/or protect the skin and/or the mucosal membranes and/or the keratinous fibers.

[0002]

It is known to use, notably in the cosmetic and dermatological fields, topical compositions in the form of emulsions. These emulsions are generally oil-in-water (O/W) or water-in-oil (W/O) emulsions. They can also be multiple emulsions of the water/oil/water (W/O/W) or oil/water/oil (O/W/O) type. Among the multiple emulsions, it is preferred to use emulsions with an external aqueous phase, namely W/O/W emulsions, which combine the advantages of freshness at application, due to the water present in the aqueous external phase, and the comfort contributed by a relatively large quantity of oil.

[0003]

However, the multiple emulsions are used little, because they frequently present problems of stability over time. The most frequently encountered destabilization mechanism is migration of water from the internal droplets toward the external aqueous medium through the intermediate oil layer, either by simple diffusion of water through the oil membrane, or by prior rupture of the oil film, causing the coalescence of internal water droplets and leading to a release

of internal water into the external aqueous medium. In general, this phenomenon, called loss phenomenon, of the multiple type finally leads to a macroscopically visible breaking of the phase and the obtention of a simple O/W emulsion instead of a triple emulsion.

[0004]

Thus, various means have been considered to overcome this drawback. In particular, one of the solutions consists of introducing into the internal aqueous phase or into the external aqueous phase one or more gelling polymer(s) whose role is to produce a lasting restriction of the movements of water from the internal phase toward the external phase. However, the multiple emulsions obtained present the defect of being sticky and of taking a long time to penetrate the skin because of the presence of large quantities of polymers which remain on the surface of the skin because of their polymer structure.

[0005]

Another solution consists of introducing lipophilic structuring agents into the oil phase. Thus, the document FR-A-2,679,788 recommends the utilization of unsaturated linear C_8-C_{14} fatty alcohols which give rise to soaps and impart a gelled structure to the emulsion. Unfortunately, the sensory properties of the emulsions obtained are unsatisfactory, because they have a tendency to become waxy upon application to the skin. In addition, the presence of soaps in the emulsion results in a soaping phenomenon, that is bleaching at the time of application to the skin.

[0006]

In addition, it is known, for example, from the document WO-A-94/1073 to use, in the triple emulsions, silicone polymers comprising the polyoxyethylenated and/or polyoxypropylenated chain which, although they are polymers, do not have the above-mentioned drawbacks. However, the use of this type of emulsifier requires the presence of a certain quantity of silicone oil in the oil phase and thus it limits the galenic composition of the triple emulsion. In addition, to obtain a satisfactory stability of the triple emulsion, it is often necessary to add a gelling agent in one of the aqueous phases.

[0007]

Thus, there remains a need for a stable multiple W/O/W emulsion which does not have the drawbacks of those of the prior art, and which is notably pleasant to use on the skin by contributing, for example, the advantages of an emulsion with external aqueous phase.

[0008]

The applicant has now found unexpectedly that the introduction of a partially or completely crosslinked organopolysiloxane elastomer comprising a polyoxyethylenated and/or polyoxypropylenated chain in a triple water/oil/water (W/O/W) emulsion allowed the stabilization of said emulsion without requiring the addition of other stabilizing agents.

[0009]

Thus, the present invention relates to a triple water/oil/water emulsion comprising an external aqueous phase and a primary W/O emulsion comprising an oil phase and an internal aqueous phase, characterized in that it contains at least one partially or completely crosslinked organopolysiloxane elastomer comprising a polyoxyethylenated and/or polyoxypropylenated chain.

[0010]

The present invention also relates to the utilization of at least one partially or completely crosslinked organopolysiloxane elastomer comprising a polyoxyethylenated and/or polyoxypropylenated chain for the stabilization of a triple water/oil/water emulsion.

[0011]

For a topical application, the emulsion according to the invention must contain a topically acceptable medium, that is, one that is compatible with the skin, the mucosal membranes and/or the keratinous fibers such as hair.

[0012]

The triple emulsion according to the invention has the advantage of being stable and of being capable of preserving the activity of active substances present in the internal aqueous phase, from which they are released during the application of the composition to the skin, the mucosal membranes and/or the hair.

[0013]

The partially or completely crosslinked organopolysiloxane elastomers that can be used in the emulsion according to the present invention are preferably introduced into the oil phase of the emulsion. They are generally emulsifiers. They can notably be chosen from the crosslinked polymers described in Patent Application No. EP-A-0545002, cited here as reference. These organopolysiloxanes are obtained by the addition polymerization of the following compounds (I) and (II):

(I) an organohydrogen polysiloxane having formula (1):

$$R^1{}_aR^2{}_bH_cSiO_{(4-a-b-c)/2} \quad (1)$$

in which R^1 represents a substituted or unsubstituted alkyl, aryl or aralkyl group, comprising 1-18 carbon atoms, or a halogenated hydrocarbon group; R^2 represents a group:

$$-C_nH_{2n}O(C_2H_4O)_d(C_3H_6O)_eR^3 \quad (3)$$

in which R^3 is a hydrogen atom, a saturated aliphatic hydrocarbon group having 1-10 carbon atoms or a -(CO)-R^5 group where R^5 is a saturated aliphatic hydrocarbon group having 1-5 carbon atoms; d is a whole number from 2 to 200, and e is a whole number from 0 to 200, provided that d + e is a number in the range of 3 to 200, and n is a number in the range of 2 to 6, a is a value satisfying the inequality: $1.0 \leq a \leq 2.5$, b is a value satisfying the inequality: $0.001 \leq b \leq 1.0$ and c is a value satisfying the inequality: $0.001 \leq c \leq 1.0$;

or an organohydrogen polysiloxane represented by the following formula (2):

$$R^1{}_fH_gSiO_{(4-f-g)/2} \quad (2)$$

in which R^1 has the same meaning as in formula (1), f is a value satisfying the inequality: $1.0 \leq f \leq 3.0$, and g is a value satisfying the inequality: $0.001 \leq g \leq 1.5$;

or a mixture of organohydrogen polysiloxanes having formulas (1) and (2), and

(II) a polyoxyalkylene represented by the following formula (A):

$$C_mH_{2m}O(C_2H_4O)_h(C_3H_6O)_iC_mH_{2m-1} \quad (A)$$

in which h is a whole number in the range of 2 to 200, i is a whole number in the range of 0 to 200, provided that h + i is a number in the range of 3 to 200, and m is a number in the range of 2 to 6,

or an organopolysiloxane represented by the following formula (B):

$$R^1{}_jR^4{}_kSiO_{(4-j-k)/2} \quad (B)$$

in which R^1 has the same meaning as in formula (1), R^4 is a monovalent hydrocarbon group having an unsaturated aliphatic bond at the end and containing 2-10 carbon atoms, j is a value satisfying the inequality: $1.0 \leq j \leq 3.0$ and k is a value satisfying the inequality: $0.001 \leq k \leq 1.5$,

or a mixture of the polyoxyalkylene having formula (A) or of the organopolysiloxane having formula (B), where at least one organohydrogen polysiloxane having formula (1) or at least one polyoxyalkylene having formula (A) is contained as an essential element of the addition polymerization.

[0014]

It is preferred for the organopolysiloxane to be in a mixture with a silicone oil and/or polyol, and to be prepared directly in such a mixture. The silicone oil preferably has a viscosity equal to or less than 100 cSt at 25°C. According to an embodiment of the invention, the organopolysiloxane elastomer is prepared from 100 parts by weight of the constituents defined above and 3-200 parts by weight of a silicone oil having a viscosity equal to or less than 100 cSt at 25°C, and/or a polyol. The silicone oil can be a volatile or nonvolatile silicone oil or a mixture of a volatile silicone oil and a nonvolatile silicone oil.

[0015]

The organopolysiloxanes of the invention are obtained, in particular, according to the protocol of Examples 3, 4 and 8 of the document EP-A-545002 (or US-5,412,004) and from the examples of the document US-A-5,811,487.

[0016]

The organopolysiloxanes of the composition of the invention contain one or more oxyalkylenated group(s) and in particular oxyethylenated (OE) group(s), for example, 1-40 oxyalkylenated units and, more advantageously, 1-20 oxyalkylenated units, that can form polyoxyalkylene, notably polyoxyethylene chains. These groups can be branches, at the end of the chain, or intended to link two parts of the silicone structure. The silicon atoms bearing these groups are approximately 1-10 in number.

[0017]

Although the invention concerns more particularly organopolysiloxanes with oxyethylenated group(s), it can also concern the organopolysiloxanes with oxypropylenated group(s). The organopolysiloxanes can comprise simultaneously one or more oxyethylenated group(s), 1-20 (OE), for example, and one or more oxypropylenated group(s) (OP), 0-20, for example; these organopolysiloxanes are also called organopolysiloxanes with alkylethoxy-propylenated group(s). It is preferred for the number of oxyethylenated groups to be larger than the number of oxypropylenated groups.

[0018]

As the partially or completely crosslinked organopolysiloxane comprising a polyoxyethylenated and/or polyoxypropylenated chain one can mention, for example, the product marketed by Shin-Etsu under the name of KSG21. This product comprises 38% organopolysiloxane and 62% silicone oil having a viscosity of 6 cSt. One can also mention the product of Example 3 of US Patent No. US-5,412,004, containing approximately 33 wt% of organopolysiloxane and approximately 67 wt% of silicone oil having a viscosity of 6 cSt.

[0019]

In the triple emulsion according to the invention, the partially or completely crosslinked organopolysiloxane is preferably used in a quantity of active matter of 0.1-10 wt%, and preferably 1-5 wt%, of the total weight of the triple emulsion.

[0020]

It is preferred for the external aqueous phase of the triple emulsion to contain at least one nonionic surfactant having an HLB (hydrophilic-lipophilic balance) of more than 12 and for the primary emulsion to contain at least one nonionic surfactant having an HLB of more than 8.

[0021]

The nonionic surfactant with an HLB > 12 optionally present in the triple emulsion can notably be chosen from ethoxylated or ethoxylated/propoxylated fatty alcohols with a fatty chain comprising 12-22 carbon atoms, ethoxylated sterols such as PEG-16 soy sterol or PEG-10 soy sterol, block copolymers of ethylene oxide and propylene oxide (Poloxamer), and mixtures thereof. It is preferred to use ethoxylated sterols and poloxamers.

[0022]

The quantity of surfactant in the external aqueous phase can be, for example, 0.5-5 wt%, preferably 1-3 wt% of the total weight of the triple emulsion.

[0023]

The nonionic surfactant with an HLB < 8 can notably be chosen from glyceryl esters, such as the mono-, di- or triglyceryl, mono-, di- or tri-isostearates or -oleates, sugar esters, such as the sucrose of methyl glucose mono- or di-isostearate or oleate, alkyl polyglucoside ethers, such as oleyl or isostearyl polyglucoside, and mixtures thereof. It is preferred to use sugar esters and alkyl polyglucoside ethers.

[0024]

The quantity of surfactant in the primary emulsion according to the invention can be, for example, 0.01-5 wt%, preferably 0.5-3 wt% of the total weight of the triple emulsion.

[0025]

The oil phase of the primary emulsion comprises one or more fatty substance(s) chosen from oils of animal origin, oils of plant origin (apricot almond oil), mineral oils (petroleum oil), synthetic oils (isohexadecane), fluorinated oils, waxes and notably silicone waxes, silicone gums, and silicone resins.

[0026]

The quantity of fatty substance preferably is in the range of 2-40 wt%, more advantageously 5-30 wt% of the total weight of the triple emulsion.

[0027]

The primary emulsion can represent, for example, 5-70 wt%, preferably 10-65 wt% of the total weight of the triple emulsion.

[0028]

The primary emulsion is prepared in the standard manner by preparation of the primary emulsion and incorporation of a predetermined quantity of the primary emulsion in the external aqueous phase.

[0029]

As indicated at the beginning of the description, one of the major interests of the emulsion according to the invention is that the latter can contain, while presenting a stable character, active substances, both cosmetic and therapeutic, where these active ingredients can thus notably be chosen from all those that are conventionally used to date in the field of cosmetics, dermatology or drugs.

[0030]

The invention also relates to a topical composition, characterized in that it contains an emulsion as defined above and at least one active substance.

[0031]

As active substances, one can notably cite polyols, such as glycerin, glycols and sugar derivatives, beta-hydroxy acids, such as salicylic acid and its derivatives, alpha-hydroxy acids, such as lactic acid and glycolic acid, filters, hydrating agents, such as protein hydrolysates, vitamins, such as vitamin E and mixtures thereof.

[0032]

The composition of the invention also makes it possible to stabilize any substance that is unstable in an oxidizing medium and one can notably cite as active substances that are unstable in an oxidizing medium certain vitamins, notably ascorbic acid (vitamin C) and its derivatives, notably its glycosylated and phosphated derivatives and its esters, such as ascorbyl acetate, palmitate and propionate, retinol (vitamin A) and its derivatives, notably its esters such as retinol acetate, palmitate and propionate; urea; rutin; enzymes such as lipase, protease, phospholipase and the cellulases; natural extracts, such as green tea, lemon balm extract, thyme extract, procyannidolic oligomers (OPC) such as tree OPC, pine OPC and grape OPC; certain acids such as kojic acid, caffeic acid, retinoic acid and its derivatives, benzene-1,4-di(3-methylidene-10-camphosulfonic) acid; carotenoids such as the carotenes, such as, for example, α-, β- and γ-carotenes, β,φ-carotene, ξ-carotene, β,λ-carotene, lycopene (ψ,ψ-carotene); polyunsaturated fatty acids such as gamma-linolenic acid, and mixtures thereof.

[0033]

They can also be any natural or synthetic compounds that can contain the active substances indicated above, particularly the plant extracts, and more specifically, fruit extracts.

[0034]

The composition of the invention is particularly interesting for stabilizing vitamins, notably vitamin C and vitamin A, and carotenoids, notably lycopene.

[0035]

The quantity of active substance in the composition according to the invention depends on the type of active substance used and the desired purpose. In general, the active substance(s) can be used in the composition according to the invention in a quantity of 0.01-20 wt%, preferably 0.04-15 wt%, and more advantageously 0.1-10 wt% with respect to the total weight of the composition.

[0036]

Depending on the hydrophilic or lipophilic character of the active substances used, they are introduced into the oil phase of the composition or into one of the aqueous phases, preferably the internal aqueous phase.

[0037]

The W/O/W emulsions according to the invention can be used in different topical applications, notably cosmetic and/or dermatological applications. The composition which is the base of this emulsion can notably constitute cleaning, protection, treatment and/or care compositions for the skin, the mucosal membranes and/or the hair, particularly for the face, the neck, the hands, the hair, the scalp, or the body, as well as the eyelashes.

[0038]

Thus, the invention also relates to the cosmetic utilization of the composition according to the invention to clean and/or treat and/or protect the skin and/or the mucosal membranes and/or the keratinous fibers, that is the hair and/or eyelashes.

[0039]

The invention also relates to the utilization of the composition according to the invention for the preparation of a composition intended to clean and/or treat and/or protect the skin and/or the mucosal membranes and/or keratinous fibers, that is the hair and/or the eyelashes.

[0040]

The invention also relates to a cosmetic method to clean and/or treat and/or protect the skin, the mucosal membranes and/or the keratinous fibers, characterized in that it consists in applying to the skin, the mucosal membranes and/or the keratinous fibers, a composition as defined above.

[0041]

The composition according to the invention can notably constitute creams for the protection, treatment or care of the face, the hands, the feet, protection or care body milks, lotions, gels or foams for the care of the skin, the mucosal membranes, the hair and the scalp.

[0042]

In a known manner, the composition of the invention can also contain lipophilic or hydrophilic adjuvants that are conventional in the cosmetic and/or dermatological fields, such as

surfactants, notably foam-producing surfactants, preservatives, antioxidants, sequestration agents, solvents, perfumes, fillers, filters, odor absorbents, dyes and lipid vesicles. The quantities of these different adjuvants are those conventionally used in the fields considered, for example, 0.01-15 wt% of the total weight of the composition. It can also contain lipid vesicles formed of ionic or nonionic lipids.

[0043]

These adjuvants, depending on their type, can be introduced into the oil phase or into one of the aqueous phases.

[0044]

The examples given below of compositions according to the invention are for illustration and without limiting character. The quantities given therein are in wt%.

Example 1: Emulsion

1. Primary emulsion:

Phase A:

[0045]

- Methyl glucose dioleate	1.5%
- Petroleum oil	3.8%
- Apricot almond oil	4.2%
- Isohexadecane	3.6%
- Cyclohexamethylsiloxane	4.5%
- KSG 21 (at 28% active matter)	2.4%

Phase B

[0046]

- Magnesium sulfate	0.4%
- Glycerin	3%
- Water	39.2%

2. Triple emulsion:

Phase A:

[0047]

- Primary emulsion	62.6%

Phase B

[0048]

- Cetyl alcohol	0.7%
- PEG-10 soy sterol	2%
- Preservative	0.5%
- Perfume	0.3%
- Demineralized water	qsp 100%

[0049]

A composition identical to that of Example 1 was prepared, except that the KSG21 was replaced with dimethicone copolyol (at 10% in cyclomethicone).

[0050]

The obtained emulsion is a simple emulsion and not a triple emulsion.

[0051]

This shows that only the association according to the invention allows the obtention of a stable triple emulsion.

Example 2: Emulsion

1. Primary emulsion:

Phase A:

[0052]

- Methyl glucose dioleate	1.5%
- Petroleum oil	3.8%
- Apricot almond oil	4.2%
- Isohexadecane	3.6%
- Cyclohexamethylsiloxane	4.5%
- KSG21 (at 28% active matter)	2.4%

Phase B:

[0053]

- Magnesium sulfate	0.4%
- Glycerin	10%
- Vitamin C	3%
- Water	29.2%

2. Triple emulsion:

Phase A:

[0054]

- Primary emulsion	62.6%

Phase B:

[0055]

- Cetyl alcohol	0.7%
- PEG-10 soy sterol	2%
- Preservative	0.5%
- Perfume	0.3%
- Demineralized water	qsp 100%

Example 3: Emulsion

1. Primary emulsion:

Phase A:

[0056]

- Silicone oil 6 cSt	12%
- Organosiloxane of Example 3 from US Patent No. 5,412,004 (or approximately 6% of active matter)	18%

Phase B:

[0057]

- Magnesium sulfate	0.7%
- Water	qsp 100%

2. Triple emulsion:

Phase A:

[0058]

- Primary emulsion	80%

Phase B:

[0059]

- Poloxamer 407	
(Synperonic PE/F 127 from the company ICI)	0.8%
- Preservative	0.5%
- Demineralized water	qsp 100%

[0060]

A stable multiple emulsion is obtained.

Example 4: Emulsion

1. Primary emulsion:

Phase A:

[0061]

- Silicone oil 6 cSt	12%
- Organosiloxane of Example 3 from Patent No. US-5,412,004	
(or approximately 6% of active matter)	18%

Phase B:

[0062]

- Magnesium sulfate	0.7%
- Water	qsp 100%

2. Triple emulsion:

Phase A:

[0063]

- Primary emulsion 80%

Phase B:

[0064]

- PEG-10 soy sterol 2%
- Cetyl alcohol 0.7%
- Preservative 0.5%
- Demineralized water qsp 100%

[0065]

A stable multiple emulsion is obtained.

Claims

1. Triple water/oil/water emulsion comprising an external aqueous phase and a primary W/O emulsion comprising an oil phase and an internal aqueous phase, characterized in that it contains at least one partially or completely crosslinked organopolysiloxane elastomer comprising a polyoxyethylenated and/or polyoxypropylenated chain.

2. Emulsion according to Claim 1, characterized by the fact that the organopolysiloxane elastomer is obtained by the addition polymerization of the following compounds (I) and (II):

(I) an organohydrogen polysiloxane having the formula (1):

$$R^1{}_aR^2{}_bH_cSiO_{(4-a-b-c)/2} \qquad (1)$$

in which R^1 represents a substituted or unsubstituted alkyl, aryl or aralkyl group, comprising 1-18 carbon atoms, or a halogenated hydrocarbon group; R^2 represents a group:

$$-C_nH_{2n}O(C_2H_4O)_d(C_3H_6O)_eR^3 \qquad (3)$$

in which R^3 is a hydrogen atom, a saturated aliphatic hydrocarbon group having 1-10 carbon atoms or a -(CO)-R^5 group where R^5 is a saturated aliphatic hydrocarbon group having 1-5 carbon atoms; d is a whole number from 2 to 200, and e is a whole number from 0 to 200,

provided that d + e is a number in the range of 3 to 200, and n is a number in the range of 2 to 6, a is a value satisfying the inequality: $1.0 \leq a \leq 2.5$, b is a value satisfying the inequality: $0.001 \leq b \leq 1.0$ and c is a value satisfying the inequality: $0.001 \leq c \leq 1.0$;

or an organohydrogen polysiloxane represented by the following formula (2):

$$R^1_f H_g SiO_{(4-f-g)/2} \qquad (2)$$

in which R^1 has the same meaning as in formula (1), f is a value satisfying the inequality: $1.0 \leq f \leq 3.0$, and g is a value satisfying the inequality: $0.001 \leq g \leq 1.5$;

or a mixture of organohydrogen polysiloxanes having formulas (1) and (2), and

(II) a polyoxyalkylene represented by the following formula (A):

$$C_mH_{2m}O(C_2H_4O)_h(C_3H_6O)_iC_mH_{2m-1} \qquad (A)$$

in which h is a whole number in the range of 2 to 200, i is a whole number in the range of 0 to 200, provided that h + i is a number in the range of 3 to 200, and m is a number in the range of 2 to 6,

or an organopolysiloxane represented by the following formula (B):

$$R^1_j R^4_k SiO_{(4-j-k)/2} \qquad (B)$$

in which R^1 has the same meaning as in formula (1), R^4 is a monovalent hydrocarbon group having an unsaturated aliphatic bond at the end and containing 2-10 carbon atoms, j is a value satisfying the inequality: $1.0 \leq j \leq 3.0$ and k is a value satisfying the inequality: $0.001 \leq k \leq 1.5$, or a mixture of the polyoxyalkylene having formula (A) or of the organopolysiloxane having formula (B), where at least one organohydrogen polysiloxane having formula (1) or at least one polyoxyalkylene having formula (A) is contained as an essential element of the addition polymerization.

3. Emulsion according to Claim 1 or 2, characterized by the fact that the organopolysiloxane is in a mixture with a silicone oil and/or a polyol.

4. Emulsion according to Claim 3, characterized by the fact that the silicone oil preferably has a viscosity equal to or less than 100 cSt at 25°C.

5. Emulsion according to the preceding claim, characterized by the fact that the silicone oil has a viscosity equal to 6 cSt at 25°C.

6. Emulsion according to the preceding claim, characterized by the fact that the silicone oil is a volatile silicone oil or a nonvolatile silicone oil or a mixture of the two.

7. Emulsion according to any one of the preceding claims, characterized in that the organopolysiloxane is present in a quantity of active matter of 0.1-10 wt% of the total weight of the triple emulsion.

8. Emulsion according to any one of the preceding claims, characterized in that the external aqueous phase contains at least one nonionic surfactant having an HLB greater than 12.

9. Emulsion according to the preceding claim, characterized in that the nonionic surfactant is chosen from ethoxylated and/or ethoxylated/propoxylated fatty alcohols with fatty chain comprising 12-22 carbon atoms, ethoxylated sterols, block polymers of ethylene oxide and of propylene oxide, and mixtures thereof.

10. Emulsion according to any one of the preceding claims, characterized in that the primary emulsion contains a nonionic surfactant with an HLB < 8.

11. Emulsion according to the preceding claim, characterized in that the nonionic surfactant is chosen from glyceryl esters, sugar esters, alkyl polyglucoside ethers, and mixtures thereof.

12. Emulsion according to any one of the preceding claims, characterized in that the oil phase contains one or more fatty substance(s) chosen from oils of animal origin, oils of plant origin, mineral oils, synthetic oils, fluorinated oils, waxes, silicone gums, and silicone resins.

13. Emulsion according to any one of the preceding claims, characterized in that the quantity of fatty substance is 2-40 wt% of the total weight of the triple emulsion.

14. Emulsion according to any one of the preceding claims, characterized in that the primary emulsion represents 5-70 wt% of the total weight of the triple emulsion.

15. Topical composition, characterized in that it contains an emulsion according to any one of the preceding claims and at least one active substance.

16. Composition according to Claim 15, characterized in that the active substance is chosen from polyols, vitamins, beta-hydroxy acids, alpha-hydroxy acids, filters, hydration agents, active substances that are unstable in an oxidizing medium, and mixtures thereof.

17. Composition according to Claim 15 or 16, characterized in that the active substance is chosen from vitamin C, vitamin A, urea, rutin, enzymes, natural extracts, procyannidolic oligomers, carotenoids, polyunsaturated fatty acids, and mixtures thereof.

18. Composition according to any one of Claims 15-17, characterized in that the active substance is present at a concentration of 0.01-20 wt% of the total weight of the composition.

19. Composition according to any one of Claims 15-18, characterized in that it comprises at least one lipophilic or hydrophilic adjuvant chosen from preservatives, antioxidants, sequestration agents, solvents, perfumes, fillers, filters, odor absorbents, dyes and lipid vesicles.

20. Cosmetic utilization of the composition according to any one of Claims 15-19 to clean and/or treat and/or protect the skin, the mucosal membranes and/or the keratinous fibers.

21. Utilization of the composition according to any one of Claims 15-19 for the preparation of a composition intended to clean and/or treat and/or protect the skin and/or mucosal membranes and/or keratinous fibers.

22. Cosmetic method to clean and/or treat and/or protect the skin and/or the keratinous fibers, characterized in that it consists in applying to the skin, the mucosal membranes and/or the keratinous fibers, a composition according to any one of Claims 15-19.

23. Utilization of at least one partially or completely crosslinked organopolysiloxane elastomer comprising a polyoxyethylenated and/or polyoxypropylenated chain, for the stabilization of a triple water/oil/water emulsion.

European Patent Office

Application Number EP 99 40 0923

EUROPEAN SEARCH REPORT

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.[6])
D,A	FR 2 693 466 A (L'OREAL) January 14, 1994 (1994-01-14) * Claims 1-19 * ---		B01F17/00 A61K7/00
A	EP 0 780 114 A (L'OREAL) June 25, 1997 (1997-06-25) * Claims 1-28 * ---		
A	EP 0 631 774 A (TH.GOLDSCHMIDT AG) January 4, 1995 (1995-01-04) * Claims 1-12 * -----		TECHNICAL FIELDS SEARCHED (Int. Cl.[6]) B01F A61K

The present search report has been drawn up for all claims.

Place of search	Date of completion of the search	Examiner
THE HAGUE	August 9, 1999	Fouquier, J-P

CATEGORY OF CITED DOCUMENTS

X: Particularly relevant if taken alone.

Y: Particularly relevant if combined with another document of the same category.

A: Technological background.

O: Non-written disclosure.

P: Intermediate document.

T: Theory or principle underlying the invention.

E: Earlier patent document, but published on, or after the filing date.

D: Document cited in the application.

L: Document cited for other reasons.

&: Member of the same patent family, corresponding document.

APPENDIX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 99 40 0923

In this appendix, the patent family members of patent documents listed in the above-referenced European Search Report are indicated.
The data on the family members correspond to the state of the files of the European Patent Office on
These data serve only for information and are given without guarantee

August 8, 1999

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